

### **REMARKS**

This responds to the Office Action mailed on 13 February 2007.

Claims 1, 9, 13, 19, 24 are amended, no claims are canceled, and no claims are added; as a result, claims 1-30 are now pending in this application. The amendments to the claims are fully supported by the specification as originally filed. No new matter is introduced. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Support for the amendments to the claims may be found in the specification, for example, on page 11, lines 15 – 26.

### **In the Drawings**

Figures 1-5 and 9-10 are amended to provide labels for blocks in these figures, in accordance with examples discussed in the specification regarding these figures. No new matter is introduced.

### **§102 Rejection of the Claims**

Claims 1-4 and 6-7 were rejected under 35 USC § 102(b) as being anticipated by Seocho-Ku (EP 0 905914 A2). Applicant traverses these grounds of rejection of these claims.

Applicant cannot find in Seocho-Ku a disclosure, a teaching, or a suggestion of a method that includes applying a time delay to a signal using an adjustable time delay line to place the signal in an anti-phase with an interference signal to provide substantially broadband cancellation of the interference signal, as recited in claim 1. Seocho-Ku provides an interference canceller and a method of using the interference canceller that provides a fixed time delay but uses a variable phase shifter to substantially provide a 180° phase change to a signal to cancel interference. Use of a variable phase shifter to substantially provide a 180° to provide a signal cancellation does not teach or suggest using an adjustable time delay to place a signal in an anti-phase with an interference signal to provide substantially broadband cancellation of the interference signal. Therefore, Applicant submits that Seocho-Ku does not teach each and every claim element of claim 1, that Seocho-Ku does not teach the identical invention in as complete detail as is contained in claim 1, and/or that Seocho-Ku does not teach each and every claim

element arranged as in claim 1. Thus, Applicant submits that Seocho-Ku does not anticipate claim 1 and that claim 1 is patentable over Seocho-Ku.

Claims 2-4 and claim 6-7 depend from claim 1. Therefore, Applicant submits that claims 2-4 and 6-7 are patentable for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claims 1-4 and 6-7, and reconsideration and allowance of these claims.

*First §103 Rejection of the Claims*

Claim 5 was rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2). Applicant traverses these grounds of rejection of this claim.

Claim 5 depends from claim 1. Therefore, Applicant submits that claim 5 is patentable over Seocho-Ku for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claim 5, and reconsideration and allowance of this claim.

*Second §103 Rejection of the Claims*

Claim 8 was rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2) in view of Sugar et al. (U.S. 2002/0080728 A1). Applicant traverses these grounds of rejection of this claim.

Applicant submits that combining Sugar et al. (hereafter Sugar) with Seocho-Ku, as proffered in the Office Action, does not cure the deficiencies of citing Seocho-Ku with respect to claim 1, as discussed above. Therefore, Applicant submits that Seocho-Ku in view of Sugar does not teach or suggest all the elements of claim 1. As a result, claim 1 is patentable over Seocho-Ku in view of Sugar. Claim 8 depends on claim 1. Thus, Applicant submits that claim 8 is patentable over Seocho-Ku in view of Sugar for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claim 8, and reconsideration and allowance of this claim.

Third §103 Rejection of the Claims

Claims 9-12 were rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2) in view of Rose, Jr. (U.S. 5,127,101). Applicant traverses these grounds of rejection of these claims.

For at least reasons similar to those discussed above with respect to claim 1, Applicant submits that independent claim 9 is patentable over Seocho-Ku. Further, Applicant submits that combining Rose (hereafter Rose) with Seocho-Ku, as proffered in the Office Action, does not cure the deficiencies of citing Seocho-Ku with respect to claim 9, as discussed herein. Therefore, Applicant submits that Seocho-Ku in view of Rose does not teach or suggest all the elements of claim 9. Thus, Applicant submits that claim 9 is patentable over Seocho-Ku in view of Rose. Claims 10-12 depend from claim 9 and are patentable over Seocho-Ku in view of Rose for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claims 9-12, and reconsideration and allowance of these claims.

Fourth §103 Rejection of the Claims

Claims 13 and 17-21 were rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2) in view of Cronyn (U.S. 4,991,165). Applicant traverses these grounds of rejection of these claims.

In the Office Action, is stated that “Seocho-Ku fails to disclose an adjustable delay line . . . Cronyn discloses an adjustable delay line . . . the computer controlled RF delay line 40 which fine tunes the delay.” As noted above, the Seocho-Ku apparatus has a phase shifter configured to change the phase of a signal and not a delay line to provide an anti-phase with an interference signal to provide substantial broadband cancellation of the interference signal. Applicant submits that the combined delay line fine tuning of Cronyn with Seocho-Ku interference canceler does not substantially change the Seocho-Ku apparatus in which phase changes are provided by a variable phase shifter. Thus, Applicant submits that Seocho-Ku in view of Cronyn does not teach or suggest all the elements of claim 13.

Considering claim 13 as a whole and the differences between claim 13 and the combination of Seocho-Ku and Cronyn, Applicant submits that Seocho-Ku in view of

Cronyn, as proffered in the Office Action, does not establish a proper *prima facie* case of obviousness with respect to claim 13, for at least the reasons discussed above. Thus, Applicant submits that claim 13 is patentable over Seocho-Ku in view of Cronyn. Claims 17-21 depend from claim 13. Therefore, Applicant submits that claims 17-21 are patentable over Seocho-Ku in view of Cronyn for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claims 13 and 17-21, and reconsideration and allowance of these claims.

*Fifth §103 Rejection of the Claims*

Claim 14 was rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2) in view of Cronyn (U.S. 4,991,165) as applied to claim 13 above, and further in view of Loo et al. (U.S. 5,757,319). Applicant traverses these grounds of rejection of this claim.

As previously noted, Seocho-Ku provides an 180° phase change using a variable phase shifter. Applicant submits that combining Loo et al. (hereafter Loo) with the combination of Seocho-Ku and Cronyn, as proffered in the Office Action, does not cure the deficiencies of citing the combination of Seocho-Ku and Cronyn with respect to claim 13, as discussed above. Therefore, Applicant submits that Seocho-Ku in view of Cronyn further in view of Loo does not teach or suggest all the elements of claim 13. As a result, claim 13 is patentable over Seocho-Ku in view of Cronyn further in view of Loo. Claim 14 depends on claim 13. Thus, Applicant submits that claim 14 is patentable over Seocho-Ku in view of Cronyn further in view of Loo for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claim 14, and reconsideration and allowance of this claim.

*Sixth §103 Rejection of the Claims*

Claims 15-16 rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2) in view of Cronyn (U.S. 4,991,165) as applied to claim 13 above, and further in view of Sengupta et al. (U.S. 6,556,102 B1). Applicant traverses these grounds of rejection of these claims.

As previously noted, Seocho-Ku provides an 180° phase change using a variable phase shifter. Applicant submits that combining Sengupta et al. (hereafter Sengupta) with the combination of Seocho-Ku and Cronyn, as proffered in the Office Action, does not cure the deficiencies of citing the combination of Seocho-Ku and Cronyn with respect to claim 13, as discussed above. Therefore, Applicant submits that Seocho-Ku in view of Cronyn further in view of Sengupta does not teach or suggest all the elements of claim 13. As a result, claim 13 is patentable over Seocho-Ku in view of Cronyn further in view of Sengupta. Claims 15-16 depend on claim 13. Thus, Applicant submits that claims 15-16 are patentable over Seocho-Ku in view of Cronyn further in view of Sengupta for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claims 15-16, and reconsideration and allowance of these claims.

*Seventh §103 Rejection of the Claims*

Claim 22 was rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2) in view of Cronyn (U.S. 4,991,165) as applied to claim 21 above, and further in view of Stolarczk et al. (U.S. 5,093,929). Applicant traverses these grounds of rejection of this claim.

As previously noted, Seocho-Ku provides an 180° phase change using a variable phase shifter. Applicant submits that combining Stolarczk et al. (hereafter Stolarczk) with the combination of Seocho-Ku and Cronyn, as proffered in the Office Action, does not cure the deficiencies of citing the combination of Seocho-Ku and Cronyn with respect to claim 13, as discussed above. Therefore, Applicant submits that Seocho-Ku in view of Cronyn further in view of Stolarczk does not teach or suggest all the elements of claim 13. As a result, claim 13 is patentable over Seocho-Ku in view of Cronyn further in view of Stolarczk. Claim 22 depends on claim 13. Thus, Applicant submits that claim 22 is patentable over Seocho-Ku in view of Cronyn further in view of Stolarczk for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claim 22, and reconsideration and allowance of this claim.

*Eight §103 Rejection of the Claims*

Claim 23 was rejected under 35 USC § 103(a) as being unpatentable over Seocho-Ku (EP 0 905 914 A2) in view of Cronyn (U.S. 4,991,165) as applied to claim 21 above, and further in view of Young (U.S. 6,643,522 B1). Applicant traverses these grounds of rejection of this claim.

As previously noted, Seocho-Ku provides an 180° phase change using a variable phase shifter. Applicant submits that combining Young with the combination of Seocho-Ku and Cronyn, as proffered in the Office Action, does not cure the deficiencies of citing the combination of Seocho-Ku and Cronyn with respect to claim 13, as discussed above. Therefore, Applicant submits that Seocho-Ku in view of Cronyn further in view of Young does not teach or suggest all the elements of claim 13. As a result, claim 13 is patentable over Seocho-Ku in view of Cronyn further in view of Young. Claim 23 depends on claim 13. Thus, Applicant submits that claim 23 is patentable over Seocho-Ku in view of Cronyn further in view of Young for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claim 23, and reconsideration and allowance of this claim.

*Ninth §103 Rejection of the Claims*

Claims 24, 26, 28, and 30 were rejected under 35 USC § 103(a) as being unpatentable over McGeehan et al. (U.S. 6,229,992 B1) in view of Cronyn (U.S. 4,991,165) and Auckland et al. (U.S. 2002/0183013 A1). Applicant traverses these grounds of rejection of these claims.

Applicant cannot find in the combination of McGeehan et al. (hereafter McGeehan) in view of Cronyn and Auckland et al. (hereafter McGeehan) a teaching or a suggestion of a system having an adjustable delay line to place a correction signal in an anti-phase with an interference signal to provide substantial broadband cancellation of the interference signal. Therefore, Applicant submits that the combination of McGeehan, Cronyn, and Auckland does not teach or suggest all the elements of claim 24.

Considering claim 24 as a whole and the differences between claim 24 and the combination of McGeehan, Cronyn, and Auckland, Applicant submits that McGeehan in view of Cronyn and Auckland, as proffered in the Office Action, does not establish a

proper *prima facie* case of obviousness with respect to claim 24, for at least the reasons discussed above. Thus, Applicant submits that claim 24 is patentable over McGeehan in view of Cronyn and Auckland. Claims 26, 28, and 30 depend from claim 24. Therefore, Applicant submits that claims 26, 28, and 30 are patentable over McGeehan in view of Cronyn and Auckland for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claims 24, 26, 28, and 30, and reconsideration and allowance of these claims.

*Tenth §103 Rejection of the Claims*

Claim 25 was rejected under 35 USC § 103(a) as being unpatentable over McGeehan et al. (U.S. 6,229,992 B1) in view of Cronyn (U.S. 4,991,165) and Auckland et al. (U.S. 2002/0183013 A1) as applied to claim 24 above, and further in view of Sugar et al. (U.S. 2002/0080728 A1). Applicant traverses these grounds of rejection of this claim.

Applicant submits that combining Sugar with McGeehan in view of Cronyn and Auckland, as proffered in the Office Action, does not cure the deficiencies of citing McGeehan in view of Cronyn and Auckland with respect to claim 24, as discussed above. Therefore, Applicant submits that McGeehan in view of Cronyn and Auckland further in view of Sugar does not teach or suggest all the elements of claim 24. As a result, claim 24 is patentable over McGeehan in view of Cronyn and Auckland further in view of Sugar. Claim 25 depends on claim 24. Thus, Applicant submits that claim 25 is patentable over McGeehan in view of Cronyn and Auckland further in view of Sugar for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claim 25, and reconsideration and allowance of this claim.

*Eleventh §103 Rejection of the Claims*

Claim 27 was rejected under 35 USC § 103(a) as being unpatentable over McGeehan et al. (U.S. 6,229,992 B1) in view of Cronyn (U.S. 4,991,165) and Auckland et al. (U.S. 2002/0183013 A1) as applied to claim 24 above. Applicant traverses these grounds of rejection of this claim.

Claim 27 depends from claim 24. Therefore, Applicant submits that claim 27 is

patentable over McGeehan in view of Cronyn and Auckland for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claim 27, and reconsideration and allowance of this claim.

*Assertion of Pertinence*

Applicant has not responded to the assertion of pertinence stated for the patents cited, but not relied upon, by the Office Action since these patents are not relied upon as part of the rejections in this Office Action. Applicant is expressly not conceding they have any pertinence and reserves the right to respond more fully should any of them form a part of some future rejection.

**RESERVATION OF RIGHTS**

Applicant does not agree with one or more comments in the instant Office Action. However, Applicant has limited the discussion of the traversal of the Office Action rejections to such discussion as is necessary to efficiently expedite the prosecution of the abovementioned application. Applicant reserves the right to further address the comments of the Examiner at a later date if necessary. In addition, Applicant reserves the right to swear behind any cited reference.



**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 371-2157) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date

14 May 2007

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 14th day of May 2007.

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